

STUDY II

CONTRASTS BETWEEN STUDENTS IN HIGH IMPLEMENTATION AND LOW IMPLEMENTATION HIGH SCHOOLS IN THE UTAH COMPREHENSIVE GUIDANCE PROGRAM

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INTRODUCTION

In addition to the survey approach described in study I of this evaluation, the authors felt it was important to look at the impact of the Comprehensive Guidance Program on important student outcomes and characteristics. This objective was accomplished through the analysis of two databases managed by the Evaluation and Assessment Section of the Utah State Office of Education. These databases are the annual Survey of the Intentions and Accomplishments of Utah High School Seniors and the statewide ACT database which is furnished to the state annually by the American College Testing Program. The availability of these data made it possible to examine the impact of levels of implementation of the Utah Comprehensive Guidance Program on student outcomes.

METHOD

The key evaluation question for this phase of the overall study was: "What impact does the level of implementation of the Comprehensive Guidance program have on important descriptors of student success and other characteristics?" The authors developed a level of implementation scale using key items from the counselor, administrator, and teacher survey forms. A composite score on these key items was computed for every school in the sample and a rank-ordered distribution of scores prepared. From the total of nearly 100 high schools, a matched set of high implementation and low implementation high schools was selected. Table 1 describes the characteristics of the two samples in terms of school location, percentage of students receiving free lunch, and the size of the grade 11 classes in each school. Clearly, the two samples are highly similar on the matching variables, thus eliminating the effects of these demographic variables in explaining any findings of differences between the two groups of schools.

RESULTS

Tables 2 through 7 present results from Utah's annual Survey of the Intentions and Accomplishments of High School Seniors. All of the results are for data gathered in the Spring of 1997. **Tables 2 and 3 show that students in high implementations schools were more positive than their peers in the low implementation sample in evaluating how well their school prepared them for a job and for continuing their education.** Some 79% of the high implementation sample students felt they were adequately or better prepared for a job, in contrast with 75% of the low implementation group. Differences were somewhat more marked on the education preparation item. Table 3 shows that 44% of the students in the high implementation sample rated their preparation as either "very good" or "more than adequate." This was in contrast to 37% in the low implementation sample.

An analysis of statistical significance using chi-square showed the differences in both tables to be significant beyond the .05 level.

Table 4 examines how students described their high school programs. A major problem in the state of Utah over a very long period of time is the percentage of high school students who characterize their high school program as "general." **This study revealed that substantially fewer students in the high implementation sample described their high school program as "general."** The difference here is 48% for the high implementation sample versus 55% for the low implementation sample. This area would appear to be a particularly crucial test for the Comprehensive Guidance program if it is effective in helping students target areas of educational/career emphasis. The differences reported in Table 4 were also analyzed using chi-square and are significant beyond the .01 level.

Table 5 depicts the **enrollment of students** in high and low implementation schools in numerous specific courses. This set of contrasts features the **typical high school math courses, frequently taken science courses, and several Advanced Placement course areas.** Given the relationship between patterns of course taking and later student success in post-secondary training and careers, these contrasts are another important area for examination of the possible impact of the implementation of

Comprehensive Guidance. **Table 5 shows that while none of the differences are profound, they are systematically in favor of the high implementation sample.** This is particularly true in the typical math sequence with the exception of advanced algebra. The same pattern can be seen in the percentage of students taking biology, chemistry, and physics. Enrollment in the Advanced Placement courses is much more nearly equal for the two samples.

Table 6 features results from an analysis of the **percentage of females taking typical mathematics and science courses.** Again, results are consistently in favor of students in the high implementation schools with the most profound differences being in the areas of trigonometry and chemistry.

Table 7 presents the percentage of the students who have taken either one or two vocational/technical courses for the two samples. **These results show consistent differences favoring the high implementation schools in virtually every vocational/technical course area.** The most marked differences are for business courses, cooperative work experience, and industrial arts.

Tables 8 and 9 present results from the ACT database. Results in both of these tables are for students who were in the graduating class of 1997. Table 8 profiles mean ACT scores for students in the high implementation sample and the low implementation sample. **Differences here are quite remarkable in favoring the high implementation schools.** The high implementation group scores higher on all five ACT scales and each of these differences is statistically significant beyond the .01 level. It is also instructive to note that the high implementation schools outscore the total state of Utah by some margin and that the state outscores the nation in every area of the ACT.

Table 9 presents **students' evaluations of guidance and career education services** in the high implementation and low implementation high schools. Among the students who characterized themselves as "completely satisfied" with the two service areas, a substantially higher percentage is reported by students in the high implementation group. Among those students who described themselves as "dissatisfied," higher percentages were found in the low implementation sample. Both these overall sets of ratings were significant at the levels indicated in table 9.

TABLE 1
DESCRIPTION OF HIGH AND LOW IMPLEMENTATION
HIGH SCHOOL SAMPLES

SAMPLE DESCRIPTION	HIGH IMPLEMENTATION SAMPLE	LOW IMPLEMENTATION SAMPLE
TOTAL NUMBER OF SCHOOLS	7	7
NUMBER OF RURAL SCHOOLS	3	3
NUMBER OF URBAN/SUBURBAN SCHOOLS	4	4
MEDIAN PERCENTAGE OF STUDENTS RECEIVING FREE LUNCH	18%	17%
MEDIAN NUMBER OF GRADE 11 STUDENTS	376	386

TABLE 2**STUDENTS' EVALUATIONS OF HIGH SCHOOL PREPARATION****"HOW WELL DID THIS SCHOOL PREPARE YOU FOR A JOB?"**

SCALE	PERCENTAGE OF STUDENTS MARKING EACH OPTION	
	High Implementation Schools N=1,477	Low Implementation Schools N=1,508
VERY WELL	11%	9%
MORE THAN ADEQUATELY	19%	16%
ADEQUATELY	49%	50%
LESS THAN ADEQUATELY	10%	13%
VERY POORLY	4%	5%
NOT SURE	7%	7%

TABLE 3**STUDENTS' EVALUATIONS OF HIGH SCHOOL PREPARATION****"HOW WELL DID THIS SCHOOL PREPARE YOU FOR CONTINUING
YOUR EDUCATION?"**

SCALE	PERCENTAGE OF STUDENTS MARKING EACH OPTION	
	High Implementation Schools N=1,477	Low Implementation Schools N=1,508
VERY WELL	20%	17%
MORE THAN ADEQUATELY	24%	20%
ADEQUATELY	44%	48%
LESS THAN ADEQUATELY	5%	8%
VERY POORLY	2%	3%
NOT SURE	4%	5%

TABLE 4**STUDENTS' DESCRIPTIONS OF THEIR
HIGH SCHOOL PROGRAMS**

PROGRAM	PERCENTAGE OF STUDENTS MARKING EACH OPTION	
	High Implementation Schools N=1,477	Low Implementation Schools N=1,508
COLLEGE PREP	44%	37%
APPLIED TECHNOLOGY (VOCATIONAL- TECHNICAL)	8%	8%
GENERAL	48%	55%

TABLE 5
ENROLLMENT IN SPECIFIC COURSES

COURSE	PERCENTAGE TAKING EACH COURSE	
	High Implementation Schools N=1,477	Low Implementation Schools N=1,508
ALGEBRA I (1ST YEAR)	88%	85%
ALGEBRA II (2ND YEAR)	77%	74%
ADVANCED ALGEBRA	39%	42%
GEOMETRY	78%	75%
TRIGONOMETRY	45%	40%
APPLIED MATH I	14%	14%
APPLIED MATH II	8%	10%
BIOLOGY	91%	89%
CHEMISTRY	55%	50%
PHYSICS	29%	28%
COMPUTER RELATED COURSE	67%	71%
ADVANCED PLACEMENT HISTORY/ GOVERNMENT/ECONOMICS	31%	31%
ADVANCED PLACEMENT ENGLISH	29%	27%
ADVANCED PLACEMENT MATHEMATICS/CALCULUS	18%	18%
ADVANCED PLACEMENT SCIENCE	17%	18%
ADVANCED PLACEMENT FOREIGN LANGUAGE	9%	9%
ADVANCED PLACEMENT ARTS OR MUSIC	19%	16%
ADVANCED PLACEMENT COMPUTER SCIENCE	4%	6%

TABLE 6

**ENROLLMENT OF FEMALES IN
MATHEMATICS AND SCIENCE COURSES**

COURSE	PERCENTAGE OF STUDENTS MARKING EACH OPTION	
	High Implementation Schools N=736	Low Implementation Schools N=706
ALGEBRA I (1ST YEAR)	90%	87%
ALGEBRA II (2ND YEAR)	79%	76%
ADVANCED ALGEBRA	39%	44%
GEOMETRY.....	80%	77%
TRIGONOMETRY	48%	41%
APPLIED MATH I	12%	13%
APPLIED MATH II.....	7%	9%
BIOLOGY.....	93%	90%
CHEMISTRY	59%	54%
PHYSICS	22%	24%

TABLE 7**PERCENTAGE OF STUDENTS WHO HAVE TAKEN EITHER
ONE OR TWO VOCATIONAL/TECHNICAL COURSES**

COURSE	HIGH IMPLEMENTATION SCHOOLS	LOW IMPLEMENTATION SCHOOLS
	N=1,477	N=1,508
AGRICULTURE	14%	13%
BUSINESS	60%	56%
HEALTH OCCUPATIONS	48%	51%
HOME ECONOMICS	48%	47%
INDUSTRIAL ARTS	40%	35%
MARKETING	21%	21%
COOPERATIVE WORK EXPERIENCE. ...	30%	25%

TABLE 8

**AVERAGE ACT SCORES OF STUDENTS IN
HIGH IMPLEMENTING VS. LOW IMPLEMENTING
HIGH SCHOOLS**

SCALE	MEAN ACT SCALE SCORES - 1997			
	HIGH IMPLEMENTATION SCHOOLS N=1,668	LOW IMPLEMENTATION SCHOOLS N=1,625	TOTAL STATE N=22,295	NATION N=959,301
MATHEMATICS	21.3 ^a	20.9	20.8	20.6
READING	22.3	21.7	22.0	21.3
ENGLISH	21.5	20.8	21.1	20.3
SCIENCE REASONING	21.8	21.4	21.6	21.1
COMPOSITE	21.9	21.3	21.5	21.0

^a All differences are statistically significant ($p < .01$)
in favor of high implementation high schools

TABLE 9

STUDENTS' EVALUATIONS OF GUIDANCE AND
CAREER EDUCATION SERVICES IN
HIGH IMPLEMENTATION VS. LOW IMPLEMENTATION
HIGH SCHOOLS
N= 22,295

Service	PERCENTAGE OF STUDENTS WHO ARE:					
	"COMPLETELY SATISFIED"		"GENERALLY SATISFIED"		"DISSATISFIED"	
	High Implementation	Low Implementation	High Implementation	Low Implementation	High Implementation	Low Implementation
GUIDANCE SERVICES ^a	53%	47%	26%	29%	17%	19%
CAREER EDUCATION ^b AND PLANNING SERVICES	53%	48%	30%	33%	13%	15%

a Student ratings are statistically significant favoring high implementation schools ($p < .01$)

b Student ratings are statistically significant favoring high implementation schools ($p < .07$)

CONCLUSIONS

An overall analysis of the information presented in this section of the report suggests a pattern of meaningful and statistically significant differences which favors the sample of seven high schools in the high implementation group. While it is important to note that this evaluation design cannot rule out the influence of unmeasured variables on these results, it is also highly probable, given the equality of the two samples on important demographics, that the influence of Comprehensive Guidance is real in impacting important student outcomes and other characteristics.

The following are the major specific conclusions from this study:

- Students in high implementing schools rated their overall **educational preparation** as more adequate.
- Students in high implementing schools rated their **job preparation** as better.
- Students in high implementing schools **took more advanced mathematics and science courses**.
- **Fewer** students in high implementing schools described their program as "general."
- Students in high implementing schools **took more vocational/technical courses**.
- Students in high implementing schools had **higher ACT scores** in every area of the test.
- Students in high implementing schools **rated guidance and career planning services in the schools higher**.